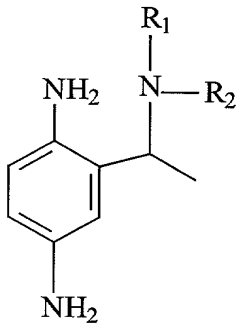
We claim:

1. A compound of formula (1):



(1)

wherein R_1 and R_2 are each individually selected from the group consisting of hydrogen atoms, C_1 to C_5 alkyl, C_1 to C_5 mono or dihydroxyalkyl, phenyl or benzyl optionally substituted with a hydroxyl, amino or C_1 to C_3 alkoxy group, or R_1 and R_2 together with the nitrogen atom to which they are attached form a C_3 to C_6 saturated or unsaturated ring optionally containing in the ring one or more additional hetero atoms selected from O, S and N atoms.

2. A compound of Claim 1 wherein R_1 and R_2 are each individually selected from the group consisting of hydrogen atom, a C_1 to C_3 alkyl group, phenyl or benzyl optionally substituted with an alkoxy group, or R_1 and R_2 together with the nitrogen atom to which they are bound form a piperazine, piperidine, imidazole, or morpholine ring.

3. A compound of Claim 2 wherein R_1 is hydrogen and R_2 is phenyl.

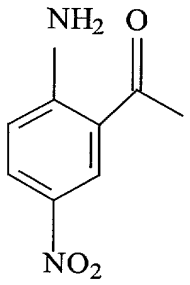
4. A compound of Claim 2 wherein R_1 and R_2 together with the nitrogen atom to which they are bound form a piperidine ring.

5. A compound of Claim 2 wherein R_1 is hydrogen and R_2 is methyl.

6. A compound of Claim 2 wherein R_1 and R_2 are both methyl.

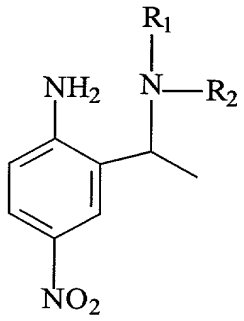
7. A process for the preparation of a compound of formula (1) of Claim 1 comprising

(a) reductively aminating a compound of formula (2):



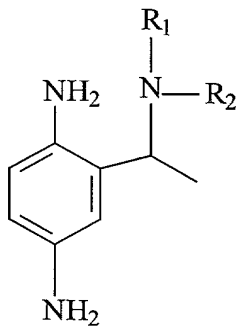
(2)

with a reagent of the formula R_1R_2NH and a reducing agent to produce a compound of formula (3)



(3)

and (b) subjecting the compound of formula (3) to catalytic hydrogenation to produce a compound of formula (1)



(1)

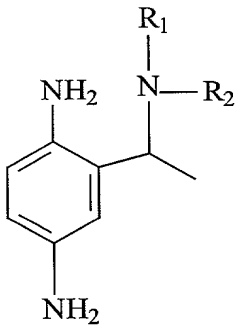
wherein R_1 and R_2 are as defined in Claim 1.

8. A process according to Claim 7 wherein R_1 and R_2 are each individually selected from the group consisting of hydrogen atom, a C_1 to C_3 alkyl group, phenyl or benzyl optionally substituted with an alkoxy group, or R_1 and R_2 together with the nitrogen atom to which they are bound form a piperazine, piperidine, imidazole, or morpholine ring.

9. A process according to Claim 7 wherein R_1 is hydrogen and R_2 is phenyl.

10. A process according to Claim 7 wherein R_1 and R_2 together with the nitrogen atom to which they are bound form a piperidine ring.

11. A hair dye product comprising a hair dyeing composition containing at least one primary intermediate and at least one coupler and a developer composition containing one or more oxidizing agents, the hair dyeing composition containing a primary intermediate comprising a compound of formula (1):



(I)

wherein R_1 and R_2 are each individually selected from the group consisting of hydrogen atoms, C_1 to C_5 alkyl, C_1 to C_5 mono or dihydroxyalkyl, phenyl or benzyl optionally substituted with a hydroxyl, amino or C_1 to C_3 alkoxy group, or R_1 and R_2 together with the nitrogen atom to which they are attached form a C_3 to C_6 saturated or unsaturated ring optionally containing in the ring one or more additional hetero atoms selected from O, S and N atoms.

12. A hair dye product according to Claim 11 wherein the hair dyeing composition additionally comprises a primary intermediate selected from the group consisting of: 2-methyl-benzene-1,4-diamine, benzene-1,4-diamine, 2-(2,5-diamino-phenyl)-ethanol, 1-(2,5-diamino-phenyl)-ethanol, 2-[(4-amino-phenyl)-(2-hydroxy-ethyl)-amino]-ethanol, 4-amino-phenol, 4-methylamino-phenol, 4-amino-3-methyl-phenol, 1-(5-amino-2-hydroxy-phenyl)-ethane-1,2-diol, 2-amino-phenol, 2-amino-5-methyl-phenol, 2-amino-6-methyl-phenol, N-(4-amino-3-hydroxy-phenyl)-acetamide, pyrimidine-2,4,5,6-tetramine, 2-(4,5-diamino-1H-pyrazol-1-yl)ethanol, 1-(4-methylbenzyl)-1H-pyrazole-4,5-diamine, and 1-(benzyl)-1H-pyrazole-4,5-diamine.

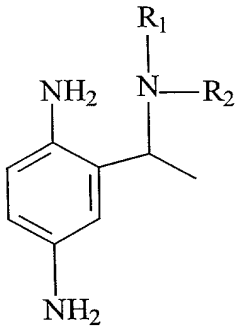
13. A hair dye product according to Claim 11 wherein the coupler present in the hair dyeing composition is selected from the group consisting of: benzene-1,3-diol, 4-chlorobenzene-1,3-diol, naphthalen-1-ol, 2-methyl-naphthalen-1-ol, 2-methyl-benzene-1,3-diol, 2-(2,4-diamino-phenoxy)-ethanol, 2-(3-amino-4-methoxy-phenylamino)-ethanol, 2-[2,4-diamino-5-(2-hydroxy-ethoxy)-phenoxy]-ethanol, and 3-(2,4-diamino-phenoxy)-propan-1-ol,

3-amino-phenol, 5-amino-2-methyl-phenol, 5-(2-hydroxy-ethylamino)-2-methyl-phenol, 3-amino-2-methyl-phenol, 3,4-dihydro-2H-1,4-benzoxazin-6-ol, 4-methyl-2-phenyl-2,4-dihydro-3H-pyrazol-3-one, 1H-indol-6-ol, and 2-aminopyridin-3-ol.

14. A hair dye product according to Claim 13 wherein the hair dyeing composition additionally comprises a primary intermediate selected from the group consisting of: 2-methyl-benzene-1,4-diamine, benzene-1,4-diamine, 2-(2,5-diamino-phenyl)-ethanol, 1-(2,5-diamino-phenyl)-ethanol, 2-[(4-amino-phenyl)-(2-hydroxy-ethyl)-amino]-ethanol, 4-amino-phenol, 4-methylamino-phenol, 4-amino-3-methyl-phenol, 1-(5-amino-2-hydroxy-phenyl)-ethane-1,2-diol, 2-amino-phenol, 2-amino-5-methyl-phenol, 2-amino-6-methyl-phenol, N-(4-amino-3-hydroxy-phenyl)-acetamide, pyrimidine-2,4,5,6-tetramine, 2-(4,5-diamino-1H-pyrazol-1-yl)ethanol, 1-(4-methylbenzyl)-1H-pyrazole-4,5-diamine, and 1-(benzyl)-1H-pyrazole-4,5-diamine.

15. A hair dye product according to Claim 11 wherein R_1 and R_2 are each individually selected from the group consisting of hydrogen atom, a C_1 to C_3 alkyl group, phenyl or benzyl optionally substituted with an alkoxy group, or R_1 and R_2 together with the nitrogen atom to which they are bound form a piperazine, piperidine, imidazole, or morpholine ring.

16. In a hair dyeing system wherein at least one primary intermediate is reacted with at least one coupler in the presence of an oxidizing agent to produce an oxidative hair dye, the improvement wherein the at least one primary intermediate comprises a compound of the formula (1):



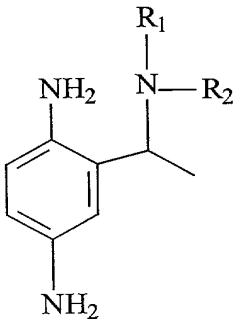
(1)

wherein R_1 and R_2 are each individually selected from the group consisting of hydrogen atoms, C_1 to C_5 alkyl, C_1 to C_5 mono or dihydroxyalkyl, phenyl or benzyl optionally substituted with a hydroxyl, amino or C_1 to C_3 alkoxy group, or R_1 and R_2 together with the nitrogen atom to which they are attached form a C_3 to C_6 saturated or unsaturated ring optionally containing in the ring one or more additional hetero atoms selected from O, S and N atoms.

17. A hair dyeing composition comprising, in a suitable carrier or vehicle, an effective hair dyeing amount of:

(a) at least one coupler, and

(b) at least one primary intermediate comprising a compound of the formula (1):



(1)

wherein R_1 and R_2 are each individually selected from the group consisting of hydrogen atoms, C_1 to C_5 alkyl, C_1 to C_5 mono or dihydroxyalkyl, phenyl or benzyl optionally substituted with a hydroxyl, amino or C_1 to C_3 alkoxy group, or R_1 and R_2 together with the nitrogen atom to which they are attached form a C_3 to C_6 saturated or unsaturated ring optionally containing in the ring one or more additional hetero atoms selected from O, S and N atom.

18. A hair dyeing composition according to Claim 17 additionally comprising a primary intermediate selected from the group consisting of: 2-methyl-benzene-1,4-diamine, benzene-1,4-diamine, 2-(2,5-diamino-phenyl)-ethanol, 1-(2,5-diamino-phenyl)-ethanol, 2-[(4-amino-phenyl)-(2-hydroxy-ethyl)-amino]-ethanol, 4-amino-phenol, 4-methylamino-phenol, 4-amino-3-methyl-phenol, 1-(5-amino-2-hydroxy-phenyl)-ethane-1,2-diol, 2-amino-phenol, 2-amino-5-methyl-phenol, 2-amino-6-methyl-phenol, N-(4-amino-3-hydroxy-phenyl)-acetamide, pyrimidine-2,4,5,6-tetramine, 2-(4,5-diamino-1H-pyrazol-1-yl)ethanol, 1-(4-methylbenzyl)-1H-pyrazole-4,5-diamine, and 1-(benzyl)-1H-pyrazole-4,5-diamine.

19. A hair dyeing composition according to Claim 17 wherein the at least one coupler is selected from the group consisting of: benzene-1,3-diol, 4-chlorobenzene-1,3-diol, naphthalen-1-ol, 2-methyl-naphthalen-1-ol, 2-methyl-benzene-1,3-diol, 2-(2,4-diamino-phenoxy)-ethanol, 2-(3-amino-4-methoxy-phenylamino)-ethanol, 2-[2,4-diamino-5-(2-hydroxy-ethoxy)-phenoxy]-ethanol, and 3-(2,4-diamino-phenoxy)-propan-1-ol, 3-amino-phenol, 5-amino-2-methyl-phenol, 5-(2-hydroxy-ethylamino)-2-methyl-phenol, 3-amino-2-methyl-phenol, 3,4-dihydro-2H-1,4-benzoxazin-6-ol, 4-methyl-2-phenyl-2,4-dihydro-3H-pyrazol-3-one, 1H-indol-6-ol, and 2-aminopyridin-3-ol.

20. A hair dyeing composition according to Claim 19 additionally comprising a primary intermediate selected from the group consisting of: 2-methyl-benzene-1,4-diamine, benzene-1,4-diamine, 2-(2,5-diamino-phenyl)-ethanol, 1-(2,5-diamino-phenyl)-ethanol, 2-[(4-amino-phenyl)-(2-hydroxy-

ethyl)-amino]-ethanol, 4-amino-phenol, 4-methylamino-phenol, 4-amino-3-methyl-phenol, 1-(5-amino-2-hydroxy-phenyl)-ethane-1,2-diol, 2-amino-phenol, 2-amino-5-methyl-phenol, 2-amino-6-methyl-phenol, N-(4-amino-3-hydroxy-phenyl)-acetamide, pyrimidine-2,4,5,6-tetramine, 2-(4,5-diamino-1H-pyrazol-1-yl)ethanol, 1-(4-methylbenzyl)-1H-pyrazole-4,5-diamine, and 1-(benzyl)-1H-pyrazole-4,5-diamine.

21. A hair dyeing composition of Claim 17 wherein R_1 and R_2 are each individually selected from the group consisting of hydrogen atom, a C_1 to C_3 alkyl group, phenyl or benzyl optionally substituted with an alkoxy group, or R_1 and R_2 together with the nitrogen atom to which they are bound form a piperazine, piperidine, imidazole, or morpholine ring.

22 A process for dyeing hair comprising forming a hair dye product composition by mixing a developer composition and a hair dyeing composition as defined in Claim 17, applying to the hair an amount of the hair dye product composition effective to dye the hair, permitting the hair dye product composition to contact the hair for period of time effective to dye the hair, and removing the hair dye product composition from the hair.

23. A process according to Claim 22 wherein R_1 and R_2 are each individually selected from the group consisting of hydrogen atom, a C_1 to C_3 alkyl group, phenyl or benzyl optionally substituted with an alkoxy group, or R_1 and R_2 together with the nitrogen atom to which they are bound form a piperazine, piperidine, imadazole, or morpholine ring.